

# SEQUENCE LISTING

<110> Turner, C. Alexander Jr.  
 Hilbun, Erin  
 Donoho, Gregory  
 Scoville, John  
 Wattler, Frank  
 Friedrich, Glenn  
 Abuin, Alejandro  
 Zambrowicz, Brian  
 Sands, Arthur T.

<120> Novel Human Neurexin-like Proteins and Polynucleotides Encoding the Same

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<213> homo sapiens

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Phe Ala Gly Asn Met Asn Ala Asp Ser Val Val His His Lys Leu Leu
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Pro Ser Gly Lys Ile Gly Met Arg Val Glu Val Tyr Gly Cys Ser Tyr
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Asp Leu Gly Asn Arg Val Glu Ile Thr Ala Val Ala Thr Gln Gly Arg			
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Thr Gly Arg Asn Trp Lys Gln Tyr Lys Gln Glu Asp Ser Ile Trp Thr			
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Pro Ser Gly Lys Ile Gly Met Arg Val Glu Val Tyr Gly Cys Ser Tyr			
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Lys Ser Asp Val Ala Asp Phe Asp Gly Arg Ser Ser Leu Leu Tyr Arg			
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Arg Gly Asp His Ile Thr Leu Glu Leu Gln Lys Gly Arg Leu Ala Leu
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<210> 12

<211> 582

<212> PRT

<213> homo sapiens

<220>

<221> VARIANT

<222> (1)...(582)

<223> Xaa = Any Amino Acid

<400> 12

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Pro Leu Ala Ser Leu Leu Ser Pro Met Ala Phe Ser Ser Ser Ser Asp
          35          40          45
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Gly Gly Trp Ser Pro Ala Asp Ser Asn Ala Gln Gln Trp Leu Gln Met
65          70          75          80
Asp Leu Gly Asn Arg Val Glu Ile Thr Ala Val Ala Thr Gln Gly Arg
          85          90          95
Tyr Gly Ser Ser Asp Trp Val Thr Ser Tyr Ser Leu Met Phe Ser Asp
          100          105          110
Thr Gly Arg Asn Trp Lys Gln Tyr Lys Gln Glu Asp Ser Ile Trp Thr
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Thr	Thr	Val	Asn	Met	Glu	Glu	Ala	Ala	Pro	Ser	Pro	Gly	Leu	Pro	Ser
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 Pro Leu Ala Ser Leu Leu Ser Pro Met Ala Phe Ser Ser Ser Ser Asp  
 35 40 45  
 Leu Thr Gly Thr His Ser Pro Ala Gln Leu Asn Trp Arg Val Gly Thr  
 50 55 60  
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530

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 <213> homo sapiens

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 <223> Xaa = Any Amino Acid

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Pro	Leu	Ala	Ser	Leu	Leu	Ser	Pro	Met	Ala	Phe	Ser	Ser	Ser	Ser	Asp
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Gly	Gly	Trp	Ser	Pro	Ala	Asp	Ser	Asn	Ala	Gln	Gln	Trp	Leu	Gln	Met
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Asp	Leu	Gly	Asn	Arg	Val	Glu	Ile	Thr	Ala	Val	Ala	Thr	Gln	Gly	Arg
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Tyr	Gly	Ser	Ser	Asp	Trp	Val	Thr	Ser	Tyr	Ser	Leu	Met	Phe	Ser	Asp
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Pro	Gln	Ile	Asp	Gly	Leu	Ser	Val	Ser	Phe	Gln	Phe	Arg	Thr	Trp	Asn
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Lys	Asp	Gly	Leu	Leu	Leu	Ser	Thr	Glu	Leu	Ser	Glu	Gly	Ser	Gly	Thr
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Val Gln Ile Tyr Ser Gly Asn Ser Tyr Tyr Phe Gly Gly Cys Pro Asp				
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Asn Leu Thr Asp Ser Gln Cys Leu Asn Pro Ile Lys Ala Phe Gln Gly				
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Leu Asn Thr Pro Asp Gly Thr Pro Phe Thr Trp Trp Ile Gly Arg Ser				
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<211> 2094

<212> DNA

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<213> homo sapiens

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<222> (1)...(697)

<223> Xaa = Any Amino Acid

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Asp Leu Gly Asn Arg Val Glu Ile Thr Ala Val Ala Thr Gln Gly Arg
 85          90          95
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100          105          110
Thr Gly Arg Asn Trp Lys Gln Tyr Lys Gln Glu Asp Ser Ile Trp Thr
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<210> 22  
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			20					25					30		
Pro	Leu	Ala	Ser	Leu	Leu	Ser	Pro	Met	Ala	Phe	Ser	Ser	Ser	Ser	Asp
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Leu	Thr	Gly	Thr	His	Ser	Pro	Ala	Gln	Leu	Asn	Trp	Arg	Val	Gly	Thr
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Asp	Leu	Gly	Asn	Arg	Val	Glu	Ile	Thr	Ala	Val	Ala	Thr	Gln	Gly	Arg
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Tyr	Gly	Ser	Ser	Asp	Trp	Val	Thr	Ser	Tyr	Ser	Leu	Met	Phe	Ser	Asp
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His	Ser	Val	Arg	Ala	Arg	Phe	Val	Arg	Phe	Val	Pro	Leu	Glu	Trp	Asn
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Pro	Ser	Gly	Lys	Ile	Gly	Met	Arg	Val	Glu	Val	Tyr	Gly	Cys	Ser	Tyr
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Lys	Ser	Asp	Val	Ala	Asp	Phe	Asp	Gly	Arg	Ser	Ser	Leu	Leu	Tyr	Arg
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His	Leu	Asn	Leu	Gly	Asp	Ser	Lys	Ala	Arg	Leu	Ser	Ser	Ser	Leu	Pro
			245					250						255	
Ser	Ala	Thr	Leu	Gly	Ser	Leu	Leu	Asp	Asp	Gln	His	Trp	His	Xaa	Val
			260					265					270		
Leu	Ile	Glu	Arg	Val	Gly	Lys	Gln	Val	Asn	Phe	Thr	Val	Asp	Lys	His
	275					280						285			
Thr	Gln	His	Phe	Arg	Thr	Lys	Gly	Glu	Thr	Asp	Ala	Leu	Asp	Ile	Asp
	290					295					300				
Tyr	Glu	Gly	Asn	Val	Thr	Phe	Ser	Cys	Ser	Glu	Pro	Gln	Ile	Val	Pro
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Ile	Thr	Phe	Val	Asn	Ser	Ser	Gly	Ser	Tyr	Leu	Leu	Leu	Pro	Gly	Thr



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785

775  
790

780

<210> 23  
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<212> DNA  
<213> Homo sapiens

<400> 23

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<210> 24

<211> 1298

<212> PRT

<213> Homo sapiens

<400> 24

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			20					25					30		
Ala	Phe	Ser	Ser	Ser	Ser	Asp	Leu	Thr	Gly	Thr	His	Ser	Pro	Ala	Gln
		35					40					45			
Leu	Asn	Trp	Arg	Val	Gly	Thr	Gly	Gly	Trp	Ser	Pro	Ala	Asp	Ser	Asn
	50					55					60				
Ala	Gln	Gln	Trp	Leu	Gln	Met	Asp	Leu	Gly	Asn	Arg	Val	Glu	Ile	Thr
65					70				75					80	
Ala	Val	Ala	Thr	Gln	Gly	Arg	Tyr	Gly	Ser	Ser	Asp	Trp	Val	Thr	Ser
			85					90						95	
Tyr	Ser	Leu	Met	Phe	Ser	Asp	Thr	Gly	Arg	Asn	Trp	Lys	Gln	Tyr	Lys
			100					105					110		
Gln	Glu	Asp	Ser	Ile	Trp	Thr	Phe	Ala	Gly	Asn	Met	Asn	Ala	Asp	Ser
		115						120					125		
Val	Val	His	His	Lys	Leu	Leu	His	Ser	Val	Arg	Ala	Arg	Phe	Val	Arg
	130					135					140				
Phe	Val	Pro	Leu	Glu	Trp	Asn	Pro	Ser	Gly	Lys	Ile	Gly	Met	Arg	Val
145					150					155					160
Glu	Val	Tyr	Gly	Cys	Ser	Tyr	Lys	Ser	Asp	Val	Ala	Asp	Phe	Asp	Gly
			165					170					175		
Arg	Ser	Ser	Leu	Leu	Tyr	Arg	Phe	Asn	Gln	Lys	Leu	Met	Ser	Thr	Leu
			180					185					190		
Lys	Asp	Val	Ile	Ser	Leu	Lys	Phe	Lys	Ser	Met	Gln	Gly	Asp	Gly	Val
		195					200					205			
Leu	Phe	His	Gly	Glu	Gly	Gln	Arg	Gly	Asp	His	Ile	Thr	Leu	Glu	Leu
	210					215						220			
Gln	Lys	Gly	Arg	Leu	Ala	Leu	His	Leu	Asn	Leu	Gly	Asp	Ser	Lys	Ala
225					230					235					240

Arg	Leu	Ser	Ser	Ser	Leu	Pro	Ser	Ala	Thr	Leu	Gly	Ser	Leu	Leu	Asp	245	250	255
Asp	Gln	His	Trp	His	Ser	Val	Leu	Ile	Glu	Arg	Val	Gly	Lys	Gln	Val	260	265	270
Asn	Phe	Thr	Val	Asp	Lys	His	Thr	Gln	His	Phe	Arg	Thr	Lys	Gly	Glu	275	280	285
Thr	Asp	Ala	Leu	Asp	Ile	Asp	Tyr	Glu	Leu	Ser	Phe	Gly	Gly	Ile	Pro	290	295	300
Val	Pro	Gly	Lys	Pro	Gly	Thr	Phe	Leu	Lys	Lys	Asn	Phe	His	Gly	Cys	305	310	315
Ile	Glu	Asn	Leu	Tyr	Tyr	Asn	Gly	Val	Asn	Ile	Ile	Asp	Leu	Ala	Lys	325	330	335
Arg	Arg	Lys	His	Gln	Ile	Tyr	Thr	Val	Gly	Asn	Val	Thr	Phe	Ser	Cys	340	345	350
Ser	Glu	Pro	Gln	Ile	Val	Pro	Ile	Thr	Phe	Val	Asn	Ser	Ser	Gly	Ser	355	360	365
Tyr	Leu	Leu	Leu	Pro	Gly	Thr	Pro	Gln	Ile	Asp	Gly	Leu	Ser	Val	Ser	370	375	380
Phe	Gln	Phe	Arg	Thr	Trp	Asn	Lys	Asp	Gly	Leu	Leu	Leu	Ser	Thr	Glu	385	390	395
Leu	Ser	Glu	Gly	Ser	Gly	Thr	Leu	Leu	Leu	Ser	Leu	Glu	Gly	Gly	Ile	405	410	415
Leu	Arg	Leu	Val	Ile	Gln	Lys	Met	Thr	Glu	Arg	Val	Ala	Glu	Ile	Leu	420	425	430
Thr	Gly	Ser	Asn	Leu	Asn	Asp	Gly	Leu	Trp	His	Ser	Val	Ser	Ile	Asn	435	440	445
Ala	Arg	Arg	Asn	Arg	Ile	Thr	Leu	Thr	Leu	Asp	Asp	Glu	Ala	Ala	Pro	450	455	460
Pro	Ala	Pro	Asp	Ser	Thr	Trp	Val	Gln	Ile	Tyr	Ser	Gly	Asn	Ser	Tyr	465	470	475
Tyr	Phe	Gly	Gly	Cys	Pro	Asp	Asn	Leu	Thr	Asp	Ser	Gln	Cys	Leu	Asn	485	490	495
Pro	Ile	Lys	Ala	Phe	Gln	Gly	Cys	Met	Arg	Leu	Ile	Phe	Ile	Asp	Asn	500	505	510
Gln	Pro	Lys	Asp	Leu	Ile	Ser	Val	Gln	Gln	Gly	Ser	Leu	Gly	Asn	Phe	515	520	525
Ser	Asp	Leu	His	Ile	Asp	Leu	Cys	Ser	Ile	Lys	Asp	Arg	Cys	Leu	Pro	530	535	540
Asn	Tyr	Cys	Glu	His	Gly	Gly	Ser	Cys	Ser	Gln	Ser	Trp	Thr	Thr	Phe	545	550	555
Tyr	Cys	Asn	Cys	Ser	Asp	Thr	Ser	Tyr	Thr	Gly	Ala	Thr	Cys	His	Asn	565	570	575
Ser	Ile	Tyr	Glu	Gln	Ser	Cys	Glu	Val	Tyr	Arg	His	Gln	Gly	Asn	Thr	580	585	590
Ala	Gly	Phe	Phe	Tyr	Ile	Asp	Ser	Asp	Gly	Ser	Gly	Pro	Leu	Gly	Pro	595	600	605
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Gln	His	Asn	Asn	Thr	Glu	Leu	Thr	Arg	Val	Arg	Gly	Ala	Asn	Pro	Glu	625	630	635
Lys	Pro	Tyr	Ala	Met	Ala	Leu	Asp	Tyr	Gly	Gly	Ser	Met	Glu	Gln	Leu	645	650	655
Glu	Ala	Val	Ile	Asp	Gly	Ser	Glu	His	Cys	Glu	Gln	Glu	Val	Ala	Tyr	660	665	670
His	Cys	Arg	Arg	Ser	Arg	Leu	Leu	Asn	Thr	Pro	Asp	Gly	Thr	Pro	Phe	675	680	685

Thr	Trp	Trp	Ile	Gly	Arg	Ser	Asn	Glu	Arg	His	Pro	Tyr	Trp	Gly	Gly	690	695	700
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Leu	Asp	Ile	Gln	His	Phe	Cys	Asn	Cys	Asp	Ala	Asp	Lys	Asp	Glu	Trp	725	730	735
Thr	Asn	Asp	Thr	Gly	Phe	Leu	Ser	Phe	Lys	Asp	His	Leu	Pro	Val	Thr	740	745	750
Gln	Ile	Val	Ile	Thr	Asp	Thr	Asp	Arg	Ser	Asn	Ser	Glu	Ala	Ala	Trp	755	760	765
Arg	Ile	Gly	Pro	Leu	Arg	Cys	Tyr	Gly	Asp	Arg	Arg	Phe	Trp	Asn	Ala	770	775	780
Val	Ser	Phe	Tyr	Thr	Glu	Ala	Ser	Tyr	Leu	His	Phe	Pro	Thr	Phe	His	785	790	795
Ala	Glu	Phe	Ser	Ala	Asp	Ile	Ser	Phe	Phe	Phe	Lys	Thr	Thr	Ala	Leu	805	810	815
Ser	Gly	Val	Phe	Leu	Glu	Asn	Leu	Gly	Ile	Lys	Asp	Phe	Ile	Arg	Leu	820	825	830
Glu	Ile	Ser	Ser	Pro	Ser	Glu	Ile	Thr	Phe	Ala	Ile	Asp	Val	Gly	Asn	835	840	845
Gly	Pro	Val	Glu	Leu	Val	Val	Gln	Ser	Pro	Ser	Leu	Leu	Asn	Asp	Asn	850	855	860
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Gly Gly Val Ile Ala Val Val Ile Phe Ile Ile Phe Cys Ile Ile Gly		
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Gln Met Lys Glu Lys Glu Tyr Pro Glu Asn Leu Asp Ser Ser Phe Arg		
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<211> 3528

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<212> PRT
<213> homo sapiens
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<223> Xaa = Any Amino Acid
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Pro Leu Ala Ser Leu Leu Ser Pro Met Ala Phe Ser Ser Ser Ser Asp
 35          40          45
Leu Thr Gly Thr His Ser Pro Ala Gln Leu Asn Trp Arg Val Gly Thr
 50          55          60
Gly Gly Trp Ser Pro Ala Asp Ser Asn Ala Gln Gln Trp Leu Gln Met
 65          70          75          80
Asp Leu Gly Asn Arg Val Glu Ile Thr Ala Val Ala Thr Gln Gly Arg
 85          90          95
Tyr Gly Ser Ser Asp Trp Val Thr Ser Tyr Ser Leu Met Phe Ser Asp
100          105          110
Thr Gly Arg Asn Trp Lys Gln Tyr Lys Gln Glu Asp Ser Ile Trp Thr
115          120          125
Phe Ala Gly Asn Met Asn Ala Asp Ser Val Val His His Lys Leu Leu
130          135          140
His Ser Val Arg Ala Arg Phe Val Arg Phe Val Pro Leu Glu Trp Asn
145          150          155          160
Pro Ser Gly Lys Ile Gly Met Arg Val Glu Val Tyr Gly Cys Ser Tyr
165          170          175
Lys Ser Asp Val Ala Asp Phe Asp Gly Arg Ser Ser Leu Leu Tyr Arg
180          185          190
Phe Asn Gln Lys Leu Met Ser Thr Leu Lys Asp Val Ile Ser Leu Lys
195          200          205
Phe Lys Ser Met Gln Gly Asp Gly Val Leu Phe His Gly Glu Gly Gln
210          215          220
Arg Gly Asp His Ile Thr Leu Glu Leu Gln Lys Gly Arg Leu Ala Leu
225          230          235          240
His Leu Asn Leu Gly Asp Ser Lys Ala Arg Leu Ser Ser Ser Leu Pro
245          250          255
Ser Ala Thr Leu Gly Ser Leu Leu Asp Asp Gln His Trp His Xaa Val
260          265          270
Leu Ile Glu Arg Val Gly Lys Gln Val Asn Phe Thr Val Asp Lys His
275          280          285
Thr Gln His Phe Arg Thr Lys Gly Glu Thr Asp Ala Leu Asp Ile Asp
290          295          300
Tyr Glu Gly Asn Val Thr Phe Ser Cys Ser Glu Pro Gln Ile Val Pro
305          310          315          320
Ile Thr Phe Val Asn Ser Ser Gly Ser Tyr Leu Leu Leu Pro Gly Thr
325          330          335
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Pro	Gln	Ile	Asp	Gly	Leu	Ser	Val	Ser	Phe	Gln	Phe	Arg	Thr	Trp	Asn	
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Leu	Leu	Leu	Ser	Leu	Glu	Gly	Gly	Ile	Leu	Arg	Leu	Val	Ile	Gln	Lys	
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Ser	Cys	Ser	Gln	Ser	Trp	Thr	Thr	Phe	Tyr	Cys	Asn	Cys	Ser	Asp	Thr	
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Glu	Val	Tyr	Arg	His	Gln	Gly	Asn	Thr	Ala	Gly	Phe	Phe	Tyr	Ile	Asp	
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Thr	Glu	Asp	Lys	Ile	Trp	Thr	Ser	Val	Gln	His	Asn	Asn	Thr	Glu	Leu	
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Thr	Arg	Val	Arg	Gly	Ala	Asn	Pro	Glu	Lys	Pro	Tyr	Ala	Met	Ala	Leu	
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Asp	Tyr	Gly	Gly	Ser	Met	Glu	Gln	Leu	Glu	Ala	Val	Ile	Asp	Gly	Ser	
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Glu	His	Cys	Glu	Gln	Glu	Val	Ala	Tyr	His	Cys	Arg	Arg	Ser	Arg	Leu	
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Leu	Asn	Thr	Pro	Asp	Gly	Thr	Pro	Phe	Thr	Trp	Trp	Ile	Gly	Arg	Ser	
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Asn	Glu	Arg	His	Pro	Tyr	Trp	Gly	Gly	Ser	Pro	Pro	Gly	Val	Gln	Gln	
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Cys	Glu	Cys	Gly	Leu	Asp	Glu	Ser	Cys	Leu	Asp	Ile	Gln	His	Phe	Cys	
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Asn	Cys	Asp	Ala	Asp	Lys	Asp	Glu	Trp	Thr	Asn	Asp	Thr	Gly	Phe	Leu	
		690				695					700					
Ser	Phe	Lys	Asp	His	Leu	Pro	Val	Thr	Gln	Ile	Val	Ile	Thr	Asp	Thr	
705					710					715					720	
Asp	Arg	Ser	Asn	Ser	Glu	Ala	Ala	Trp	Arg	Ile	Gly	Pro	Leu	Arg	Cys	
			725					730						735		
Tyr	Gly	Asp	Arg	Arg	Phe	Trp	Asn	Ala	Val	Ser	Phe	Tyr	Thr	Glu	Ala	
		740						745					750			
Ser	Tyr	Leu	His	Phe	Pro	Thr	Phe	His	Ala	Glu	Phe	Ser	Ala	Asp	Ile	
		755					760					765				
Ser	Phe	Phe	Lys	Thr	Thr	Ala	Leu	Ser	Gly	Val	Phe	Leu	Glu	Asn		
		770			775					780						

Leu	Gly	Ile	Lys	Asp	Phe	Ile	Arg	Leu	Glu	Ile	Ser	Ser	Pro	Ser	Glu	785	790	795	800
Ile	Thr	Phe	Ala	Ile	Asp	Val	Gly	Asn	Gly	Pro	Val	Glu	Leu	Val	Val	805	810	815	
Gln	Ser	Pro	Ser	Leu	Leu	Asn	Asp	Asn	Gln	Trp	His	Tyr	Val	Arg	Ala	820	825	830	
Glu	Arg	Asn	Leu	Lys	Glu	Thr	Ser	Leu	Gln	Val	Asp	Asn	Leu	Pro	Arg	835	840	845	
Ser	Thr	Arg	Glu	Thr	Ser	Glu	Glu	Gly	His	Phe	Arg	Leu	Gln	Leu	Asn	850	855	860	
Ser	Gln	Leu	Phe	Val	Gly	Gly	Thr	Ser	Ser	Arg	Gln	Lys	Gly	Phe	Leu	865	870	875	880
Gly	Cys	Ile	Arg	Ser	Leu	His	Leu	Asn	Gly	Gln	Lys	Met	Asp	Leu	Glu	885	890	895	
Glu	Arg	Ala	Lys	Val	Thr	Ser	Gly	Val	Arg	Pro	Gly	Cys	Pro	Gly	His	900	905	910	
Cys	Ser	Ser	Tyr	Gly	Ser	Ile	Cys	His	Asn	Gly	Gly	Lys	Cys	Val	Glu	915	920	925	
Lys	His	Asn	Gly	Tyr	Leu	Cys	Asp	Cys	Thr	Asn	Ser	Pro	Tyr	Glu	Gly	930	935	940	
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Val	Thr	Tyr	Met	Phe	Gln	Glu	Pro	Tyr	Pro	Val	Thr	Lys	Asn	Ile	Ser	965	970	975	
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Ile	Asn	Ser	Ser	Ser	Gln	Asp	Phe	Val	Val	Val	Leu	Leu	Cys	Lys	Asn	1010	1015	1020	
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Phe	Thr	Ile	Asp	Ala	Asp	Asn	Phe	Ala	Asn	Arg	Arg	Met	His	His	Leu	1045	1050	1055	
Lys	Ile	Asn	Arg	Glu	Gly	Arg	Glu	Leu	Thr	Ile	Gln	Met	Asp	Gln	Gln	1060	1065	1070	
Leu	Arg	Leu	Ser	Tyr	Asn	Phe	Ser	Pro	Glu	Val	Glu	Phe	Arg	Val	Ile	1075	1080	1085	
Arg	Ser	Leu	Thr	Leu	Gly	Lys	Val	Thr	Glu	Asn	Leu	Gly	Leu	Asp	Ser	1090	1095	1100	
Glu	Val	Ala	Lys	Ala	Asn	Ala	Met	Gly	Phe	Ala	Gly	Cys	Met	Ser	Ser	1105	1110	1115	1120
Val	Gln	Tyr	Asn	His	Ile	Ala	Pro	Leu	Lys	Ala	Ala	Leu	Arg	His	Ala	1125	1130	1135	
Thr	Val	Ala	Pro	Val	Thr	Val	His	Gly	Thr	Leu	Thr	Glu	Ser	Ser	Cys	1140	1145	1150	
Gly	Phe	Met	Val	Asp	Ser	Asp	Val	Asn	Ala	Val	Thr	Thr	Val	His	Ser	1155	1160	1165	
Ser	Ser	Asp	Pro	Phe	Gly	Lys	Thr	Asp	Glu	Arg	Glu	Pro	Leu	Thr	Asn	1170	1175	1180	
Ala	Val	Arg	Ser	Asp	Ser	Ala	Val	Ile	Gly	Gly	Val	Ile	Ala	Val	Val	1185	1190	1195	1200
Ile	Phe	Ile	Ile	Phe	Cys	Ile	Ile	Gly	Ile	Met	Thr	Arg	Phe	Leu	Tyr	1205	1210	1215	
Gln	His	Lys	Gln	Ser	His	Arg	Thr	Ser	Gln	Met	Lys	Glu	Lys	Glu	Tyr	1220	1225	1230	



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Thr Val Ser Glu Cys Lys Arg Glu Tyr Phe Ile  
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<212> DNA  
<213> homo sapiens

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<213> homo sapiens

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His Glu Cys  
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<211> 753  
<212> DNA  
<213> homo sapiens

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gctgactttg atggccgaag ctcaacttctg tacaggttca atcagaagtt gatgagtact 600  
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<221> VARIANT

<222> (1)...(279)

<223> Xaa = Any Amino Acid

<400> 10

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          20          25          30
Pro Leu Ala Ser Leu Leu Ser Pro Met Ala Phe Ser Ser Ser Ser Asp
          35          40          45
Leu Thr Gly Thr His Ser Pro Ala Gln Leu Asn Trp Arg Val Gly Thr
          50          55          60
Gly Gly Trp Ser Pro Ala Asp Ser Asn Ala Gln Gln Trp Leu Gln Met
65          70          75          80
Asp Leu Gly Asn Arg Val Glu Ile Thr Ala Val Ala Thr Gln Gly Arg
          85          90          95
Tyr Gly Ser Ser Asp Trp Val Thr Ser Tyr Ser Leu Met Phe Ser Asp
          100          105          110
Thr Gly Arg Asn Trp Lys Gln Tyr Lys Gln Glu Asp Ser Ile Trp Thr
          115          120          125
Phe Ala Gly Asn Met Asn Ala Asp Ser Val Val His His Lys Leu Leu
          130          135          140
His Ser Val Arg Ala Arg Phe Val Arg Phe Val Pro Leu Glu Trp Asn
145          150          155          160
Pro Ser Gly Lys Ile Gly Met Arg Val Glu Val Tyr Gly Cys Ser Tyr
          165          170          175
Lys Ser Asp Val Ala Asp Phe Asp Gly Arg Ser Ser Leu Leu Tyr Arg
          180          185          190
Phe Asn Gln Lys Leu Met Ser Thr Leu Lys Asp Val Ile Ser Leu Lys
          195          200          205
Phe Lys Ser Met Gln Gly Asp Gly Val Leu Phe His Gly Glu Gly Gln
          210          215          220
Arg Gly Asp His Ile Thr Leu Glu Leu Gln Lys Gly Arg Leu Ala Leu
225          230          235          240
His Leu Asn Leu Gly Asp Ser Lys Ala Arg Leu Ser Thr Cys Pro Leu
          245          250          255
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<210> 11

<211> 1749

<212> DNA

<213> homo sapiens

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agagttggaa ctggcggttg gtccccagca gattccaatg ctcaacagtg gctccagatg      240
gacctgggaa acagagtaga gattacagca gtggccacgc agggaagata cggaagctct      300
gactgggtga cgagttacag cctgatgttc agtgacacag gacgcaactg gaaacagtac      360
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gctgactttg atggccgaag ctcaattctg tacagggtca atcagaagtt gatgagtact 600
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caggggaatac agccggcttc ttctacatcg actcagatgg cagcggccca ctgggacctc 1680
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<210> 12

<211> 582

<212> PRT

<213> homo sapiens

<220>

<221> VARIANT

<222> (1)...(582)

<223> Xaa = Any Amino Acid

<400> 12

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          20          25          30
Pro Leu Ala Ser Leu Leu Ser Pro Met Ala Phe Ser Ser Ser Ser Asp
          35          40          45
Leu Thr Gly Thr His Ser Pro Ala Gln Leu Asn Trp Arg Val Gly Thr
          50          55          60
Gly Gly Trp Ser Pro Ala Asp Ser Asn Ala Gln Gln Trp Leu Gln Met
65          70          75          80
Asp Leu Gly Asn Arg Val Glu Ile Thr Ala Val Ala Thr Gln Gly Arg
          85          90          95
Tyr Gly Ser Ser Asp Trp Val Thr Ser Tyr Ser Leu Met Phe Ser Asp
          100          105          110
Thr Gly Arg Asn Trp Lys Gln Tyr Lys Gln Glu Asp Ser Ile Trp Thr
          115          120          125
Phe Ala Gly Asn Met Asn Ala Asp Ser Val Val His His Lys Leu Leu
          130          135          140
His Ser Val Arg Ala Arg Phe Val Arg Phe Val Pro Leu Glu Trp Asn
145          150          155          160
Pro Ser Gly Lys Ile Gly Met Arg Val Glu Val Tyr Gly Cys Ser Tyr

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				165					170					175			
Lys	Ser	Asp	Val	Ala	Asp	Phe	Asp	Gly	Arg	Ser	Ser	Leu	Leu	Tyr	Arg		
			180					185					190				
Phe	Asn	Gln	Lys	Leu	Met	Ser	Thr	Leu	Lys	Asp	Val	Ile	Ser	Leu	Lys		
		195					200					205					
Phe	Lys	Ser	Met	Gln	Gly	Asp	Gly	Val	Leu	Phe	His	Gly	Glu	Gly	Gln		
	210					215					220						
Arg	Gly	Asp	His	Ile	Thr	Leu	Glu	Leu	Gln	Lys	Gly	Arg	Leu	Ala	Leu		
225					230					235					240		
His	Leu	Asn	Leu	Gly	Asp	Ser	Lys	Ala	Arg	Leu	Ser	Ser	Ser	Leu	Pro		
			245					250						255			
Ser	Ala	Thr	Leu	Gly	Ser	Leu	Leu	Asp	Asp	Gln	His	Trp	His	Xaa	Val		
			260					265					270				
Leu	Ile	Glu	Arg	Val	Gly	Lys	Gln	Val	Asn	Phe	Thr	Val	Asp	Lys	His		
	275						280					285					
Thr	Gln	His	Phe	Arg	Thr	Lys	Gly	Glu	Thr	Asp	Ala	Leu	Asp	Ile	Asp		
	290					295				300							
Tyr	Glu	Leu	Ser	Phe	Gly	Gly	Ile	Pro	Val	Pro	Gly	Lys	Pro	Gly	Thr		
305					310					315					320		
Phe	Leu	Lys	Lys	Asn	Phe	His	Gly	Cys	Ile	Glu	Asn	Leu	Tyr	Tyr	Asn		
				325					330					335			
Gly	Val	Asn	Ile	Ile	Xaa	Leu	Ala	Lys	Arg	Arg	Lys	His	Gln	Ile	Tyr		
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<211> 1605

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<400> 13

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<223> Xaa = Any Amino Acid

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cccttactggg gaggttcccc tcctgggggtc cagcagtgtg agtgtggcct agacgagagc 2040
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<210> 18
<211> 697
<212> PRT
<213> homo sapiens

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<220>
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<223> Xaa = Any Amino Acid

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Pro Leu Ala Ser Leu Leu Ser Pro Met Ala Phe Ser Ser Ser Ser Asp
          35          40          45
Leu Thr Gly Thr His Ser Pro Ala Gln Leu Asn Trp Arg Val Gly Thr
          50          55          60
Gly Gly Trp Ser Pro Ala Asp Ser Asn Ala Gln Gln Trp Leu Gln Met
65          70          75          80
Asp Leu Gly Asn Arg Val Glu Ile Thr Ala Val Ala Thr Gln Gly Arg
          85          90          95
Tyr Gly Ser Ser Asp Trp Val Thr Ser Tyr Ser Leu Met Phe Ser Asp
          100          105          110
Thr Gly Arg Asn Trp Lys Gln Tyr Lys Gln Glu Asp Ser Ile Trp Thr
          115          120          125
Phe Ala Gly Asn Met Asn Ala Asp Ser Val Val His His Lys Leu Leu
          130          135          140
His Ser Val Arg Ala Arg Phe Val Arg Phe Val Pro Leu Glu Trp Asn
145          150          155          160

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Pro	Ser	Gly	Lys	Ile	Gly	Met	Arg	Val	Glu	Val	Tyr	Gly	Cys	Ser	Tyr	165	170	175
Lys	Ser	Asp	Val	Ala	Asp	Phe	Asp	Gly	Arg	Ser	Ser	Leu	Leu	Tyr	Arg	180	185	190
Phe	Asn	Gln	Lys	Leu	Met	Ser	Thr	Leu	Lys	Asp	Val	Ile	Ser	Leu	Lys	195	200	205
Phe	Lys	Ser	Met	Gln	Gly	Asp	Gly	Val	Leu	Phe	His	Gly	Glu	Gly	Gln	210	215	220
Arg	Gly	Asp	His	Ile	Thr	Leu	Glu	Leu	Gln	Lys	Gly	Arg	Leu	Ala	Leu	225	230	235
His	Leu	Asn	Leu	Gly	Asp	Ser	Lys	Ala	Arg	Leu	Ser	Ser	Ser	Leu	Pro	245	250	255
Ser	Ala	Thr	Leu	Gly	Ser	Leu	Leu	Asp	Asp	Gln	His	Trp	His	Xaa	Val	260	265	270
Leu	Ile	Glu	Arg	Val	Gly	Lys	Gln	Val	Asn	Phe	Thr	Val	Asp	Lys	His	275	280	285
Thr	Gln	His	Phe	Arg	Thr	Lys	Gly	Glu	Thr	Asp	Ala	Leu	Asp	Ile	Asp	290	295	300
Tyr	Glu	Gly	Asn	Val	Thr	Phe	Ser	Cys	Ser	Glu	Pro	Gln	Ile	Val	Pro	305	310	315
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Lys	Asp	Gly	Leu	Leu	Leu	Ser	Thr	Glu	Leu	Ser	Glu	Gly	Ser	Gly	Thr	355	360	365
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Met	Thr	Glu	Arg	Val	Ala	Glu	Ile	Leu	Thr	Gly	Ser	Asn	Leu	Asn	Asp	385	390	395
Gly	Leu	Trp	His	Ser	Val	Ser	Ile	Asn	Ala	Arg	Arg	Asn	Arg	Ile	Thr	405	410	415
Leu	Thr	Leu	Asp	Asp	Glu	Ala	Ala	Pro	Pro	Ala	Pro	Asp	Ser	Thr	Trp	420	425	430
Val	Gln	Ile	Tyr	Ser	Gly	Asn	Ser	Tyr	Tyr	Phe	Gly	Gly	Cys	Pro	Asp	435	440	445
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Val	Gln	Gln	Gly	Ser	Leu	Gly	Asn	Phe	Ser	Asp	Leu	His	Ile	Asp	Leu	485	490	495
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Ser	Tyr	Thr	Gly	Ala	Thr	Cys	His	Asn	Ser	Ile	Tyr	Glu	Gln	Ser	Cys	530	535	540
Glu	Val	Tyr	Arg	His	Gln	Gly	Asn	Thr	Ala	Gly	Phe	Phe	Tyr	Ile	Asp	545	550	555
Ser	Asp	Gly	Ser	Gly	Pro	Leu	Gly	Pro	Leu	Gln	Val	Tyr	Cys	Asn	Ile	565	570	575
Thr	Glu	Asp	Lys	Ile	Trp	Thr	Ser	Val	Gln	His	Asn	Asn	Thr	Glu	Leu	580	585	590
Thr	Arg	Val	Arg	Gly	Ala	Asn	Pro	Glu	Lys	Pro	Tyr	Ala	Met	Ala	Leu	595	600	605



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Glu	His	Cys	Glu	Gln	Glu	Val	Ala	Tyr	His	Cys	Arg	Arg	Ser	Arg	Leu
625					630					635					640
Leu	Asn	Thr	Pro	Asp	Gly	Thr	Pro	Phe	Thr	Trp	Trp	Ile	Gly	Arg	Ser
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Asn	Glu	Arg	His	Pro	Tyr	Trp	Gly	Gly	Ser	Pro	Pro	Gly	Val	Gln	Gln
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Cys	Glu	Cys	Gly	Leu	Asp	Glu	Ser	Cys	Leu	Asp	Ile	Gln	His	Phe	Cys
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 <212> DNA  
 <213> homo sapiens

<400> 19

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Pro	Leu	Ala	Ser	Leu	Leu	Ser	Pro	Met	Ala	Phe	Ser	Ser	Ser	Ser	Asp
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Leu	Thr	Gly	Thr	His	Ser	Pro	Ala	Gln	Leu	Asn	Trp	Arg	Val	Gly	Thr
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Gly	Gly	Trp	Ser	Pro	Ala	Asp	Ser	Asn	Ala	Gln	Gln	Trp	Leu	Gln	Met
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Asp	Leu	Gly	Asn	Arg	Val	Glu	Ile	Thr	Ala	Val	Ala	Thr	Gln	Gly	Arg
				85					90					95	
Tyr	Gly	Ser	Ser	Asp	Trp	Val	Thr	Ser	Tyr	Ser	Leu	Met	Phe	Ser	Asp
			100					105					110		
Thr	Gly	Arg	Asn	Trp	Lys	Gln	Tyr	Lys	Gln	Glu	Asp	Ser	Ile	Trp	Thr
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Phe	Ala	Gly	Asn	Met	Asn	Ala	Asp	Ser	Val	Val	His	His	Lys	Leu	Leu
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His	Ser	Val	Arg	Ala	Arg	Phe	Val	Arg	Phe	Val	Pro	Leu	Glu	Trp	Asn
145					150					155					160
Pro	Ser	Gly	Lys	Ile	Gly	Met	Arg	Val	Glu	Val	Tyr	Gly	Cys	Ser	Tyr
			165						170					175	
Lys	Ser	Asp	Val	Ala	Asp	Phe	Asp	Gly	Arg	Ser	Ser	Leu	Leu	Tyr	Arg
			180					185					190		
Phe	Asn	Gln	Lys	Leu	Met	Ser	Thr	Leu	Lys	Asp	Val	Ile	Ser	Leu	Lys
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Phe	Lys	Ser	Met	Gln	Gly	Asp	Gly	Val	Leu	Phe	His	Gly	Glu	Gly	Gln
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Arg	Gly	Asp	His	Ile	Thr	Leu	Glu	Leu	Gln	Lys	Gly	Arg	Leu	Ala	Leu
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His	Leu	Asn	Leu	Gly	Asp	Ser	Lys	Ala	Arg	Leu	Ser	Ser	Ser	Leu	Pro
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			260					265					270		
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	290					295					300				
Tyr	Glu	Leu	Ser	Phe	Gly	Gly	Ile	Pro	Val	Pro	Gly	Lys	Pro	Gly	Thr

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				325					330						335
Gly	Val	Asn	Ile	Ile	Xaa	Leu	Ala	Lys	Arg	Arg	Lys	His	Gln	Ile	Tyr
				340					345					350	
Thr	Val	Gly	Asn	Val	Thr	Phe	Ser	Cys	Ser	Glu	Pro	Gln	Ile	Val	Pro
				355				360					365		
Ile	Thr	Phe	Val	Asn	Ser	Ser	Gly	Ser	Tyr	Leu	Leu	Leu	Pro	Gly	Thr
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Pro	Gln	Ile	Asp	Gly	Leu	Ser	Val	Ser	Phe	Gln	Phe	Arg	Thr	Trp	Asn
385					390					395					400
Lys	Asp	Gly	Leu	Leu	Leu	Ser	Thr	Glu	Leu	Ser	Glu	Gly	Ser	Gly	Thr
				405					410					415	
Leu	Leu	Leu	Ser	Leu	Glu	Gly	Gly	Ile	Leu	Arg	Leu	Val	Ile	Gln	Lys
				420				425						430	
Met	Thr	Glu	Arg	Val	Ala	Glu	Ile	Leu	Thr	Gly	Ser	Asn	Leu	Asn	Asp
				435				440					445		
Gly	Leu	Trp	His	Ser	Val	Ser	Ile	Asn	Ala	Arg	Arg	Asn	Arg	Ile	Thr
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Leu	Thr	Leu	Asp	Asp	Glu	Ala	Ala	Pro	Pro	Ala	Pro	Asp	Ser	Thr	Trp
465					470					475					480
Val	Gln	Ile	Tyr	Ser	Gly	Asn	Ser	Tyr	Tyr	Phe	Gly	Gly	Cys	Pro	Asp
				485					490					495	
Asn	Leu	Thr	Asp	Ser	Gln	Cys	Leu	Asn	Pro	Ile	Lys	Ala	Phe	Gln	Gly
				500				505					510		
Cys	Met	Arg	Leu	Ile	Phe	Ile	Asp	Asn	Gln	Pro	Lys	Asp	Leu	Ile	Ser
				515				520				525			
Val	Gln	Gln	Gly	Ser	Leu	Gly	Asn	Phe	Ser	Asp	Leu	His	Ile	Asp	Leu
				530				535				540			
Cys	Ser	Ile	Lys	Asp	Arg	Cys	Leu	Pro	Asn	Tyr	Cys	Glu	His	Gly	Gly
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Ser	Cys	Ser	Gln	Ser	Trp	Thr	Thr	Phe	Tyr	Cys	Asn	Cys	Ser	Asp	Thr
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Ser	Tyr	Thr	Gly	Ala	Thr	Cys	His	Asn	Ser	Ile	Tyr	Glu	Gln	Ser	Cys
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Glu	Val	Tyr	Arg	His	Gln	Gly	Asn	Thr	Ala	Gly	Phe	Phe	Tyr	Ile	Asp
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Ser	Asp	Gly	Ser	Gly	Pro	Leu	Gly	Pro	Leu	Gln	Val	Tyr	Cys	Asn	Ile
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Thr	Glu	Asp	Lys	Ile	Trp	Thr	Ser	Val	Gln	His	Asn	Asn	Thr	Glu	Leu
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Thr	Arg	Val	Arg	Gly	Ala	Asn	Pro	Glu	Lys	Pro	Tyr	Ala	Met	Ala	Leu
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Asp	Tyr	Gly	Gly	Ser	Met	Glu	Gln	Leu	Glu	Ala	Val	Ile	Asp	Gly	Ser
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Glu	His	Cys	Glu	Gln	Glu	Val	Ala	Tyr	His	Cys	Arg	Arg	Ser	Arg	Leu
				675				680				685			
Leu	Asn	Thr	Pro	Asp	Gly	Thr	Pro	Phe	Thr	Trp	Trp	Ile	Gly	Arg	Ser
				690				695				700			
Asn	Glu	Arg	His	Pro	Tyr	Trp	Gly	Gly	Ser	Pro	Pro	Gly	Val	Gln	Gln
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Cys	Glu	Cys	Gly	Leu	Asp	Glu	Ser	Cys	Leu	Asp	Ile	Gln	His	Phe	Cys
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Asn	Cys	Asp	Ala	Asp	Lys	Asp	Glu	Trp	Thr	Asn	Asp	Thr	Gly	Phe	Leu
				740				745					750		
Ser	Phe	Lys	Asp	His	Leu	Pro	Val	Thr	Gln	Ile	Val	Ile	Thr	Asp	Thr

755	760	765
Asp Arg Ser Asn Ser Glu Ala Ala Trp Arg Ile Gly Pro Leu Arg Cys		
770	775	780
Tyr Gly Asp Arg Glu Tyr Lys Ile Glu Arg Ser Phe Leu Ser Ala Leu		
785	790	795
His Glu His Lys Met Phe Leu Leu Pro Tyr Pro Phe Ser Leu Gln Cys		
805	810	815
Ala Leu Val Leu Lys Ile Ile His Met Ser Ser Ala Phe Pro Tyr Pro		
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Thr Glu Asn Asp Lys Pro Cys		
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<400> 21

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 Ile Thr Phe Val Asn Ser Ser Gly Ser Tyr Leu Leu Leu Pro Gly Thr  
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<211> 3897

<212> DNA

<213> Homo sapiens

<400> 23

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Leu	Asn	Trp	Arg	Val	Gly	Thr	Gly	Gly	Trp	Ser	Pro	Ala	Asp	Ser	Asn
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Ala	Gln	Gln	Trp	Leu	Gln	Met	Asp	Leu	Gly	Asn	Arg	Val	Glu	Ile	Thr
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Ala	Val	Ala	Thr	Gln	Gly	Arg	Tyr	Gly	Ser	Ser	Asp	Trp	Val	Thr	Ser
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Tyr	Ser	Leu	Met	Phe	Ser	Asp	Thr	Gly	Arg	Asn	Trp	Lys	Gln	Tyr	Lys
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Gln	Glu	Asp	Ser	Ile	Trp	Thr	Phe	Ala	Gly	Asn	Met	Asn	Ala	Asp	Ser
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Phe	Val	Pro	Leu	Glu	Trp	Asn	Pro	Ser	Gly	Lys	Ile	Gly	Met	Arg	Val
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Gln	Lys	Gly	Arg	Leu	Ala	Leu	His	Leu	Asn	Leu	Gly	Asp	Ser	Lys	Ala
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Leu Asp Ile Gln His Phe Cys Asn Cys Asp Ala Asp Lys Asp Glu Trp				720
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Thr Asn Asp Thr Gly Phe Leu Ser Phe Lys Asp His Leu Pro Val Thr				
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Gln Ile Val Ile Thr Asp Thr Asp Arg Ser Asn Ser Glu Ala Ala Trp				
	755		760	765
Arg Ile Gly Pro Leu Arg Cys Tyr Gly Asp Arg Arg Phe Trp Asn Ala				
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Val Ser Phe Tyr Thr Glu Ala Ser Tyr Leu His Phe Pro Thr Phe His				
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Ala Glu Phe Ser Ala Asp Ile Ser Phe Phe Phe Lys Thr Thr Ala Leu				
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Glu Ile Ser Ser Pro Ser Glu Ile Thr Phe Ala Ile Asp Val Gly Asn				
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Gln Trp His Tyr Val Arg Ala Glu Arg Asn Leu Lys Glu Thr Ser Leu				
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Gln Val Asp Asn Leu Pro Arg Ser Thr Arg Glu Thr Ser Glu Glu Gly				
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Ser Arg Gln Lys Gly Phe Leu Gly Cys Ile Arg Ser Leu His Leu Asn				
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Gly Gln Lys Met Asp Leu Glu Glu Arg Ala Lys Val Thr Ser Gly Val				
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Asn Gly Gly Lys Cys Val Glu Lys His Asn Gly Tyr Leu Cys Asp Cys				
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Thr Asn Ser Pro Tyr Glu Gly Pro Phe Cys Lys Lys Glu Val Ser Ala				
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Val Phe Glu Ala Gly Thr Ser Val Thr Tyr Met Phe Gln Glu Pro Tyr				
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Pro Val Thr Lys Asn Ile Ser Leu Ser Ser Ser Ala Ile Tyr Thr Asp				
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Ser Ala Pro Ser Lys Glu Asn Ile Ala Leu Ser Phe Val Thr Thr Gln				
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Val Val Leu Leu Cys Lys Asn Gly Ser Leu Gln Val Arg Tyr His Leu				
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Asn Arg Arg Met His His Leu Lys Ile Asn Arg Glu Gly Arg Glu Leu				
	1090		1095	1100
Thr Ile Gln Met Asp Gln Gln Leu Arg Leu Ser Tyr Asn Phe Ser Pro				
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Glu Arg Glu Pro Leu Thr Asn Ala Val Arg Ser Asp Ser Ala Val Ile		
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Gly Gly Val Ile Ala Val Val Ile Phe Ile Ile Phe Cys Ile Ile Gly		
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<211> 3528

<212> DNA

<213> Homo sapiens

<400> 25

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<212> PRT

<213> Homo sapiens

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